KeContact P20

User manual

KEBA

Automation by innovation.

Comments to this manual

In this manual you will find warnings against possible dangerous situations. The used symbols apply to the following meanings:

WARNING!

- **Indicates a potentially hazardous situation which, if not avoided could result in death or serious injury.**

CAUTION!

- **Indicates a potentially hazardous situation which, if not avoided may result in minor or moderate injury.**

CAUTION

- **Indicates a situation which, if not avoided could result in property damage.**

- **This symbol reminds you of the possible consequences of touching electrostatically sensitive components.**

Notice
Notes on use of equipment and useful practical tips are identified by "Notice". Notices do not contain any information that draws attention to potentially dangerous or harmful functions.

► Step of a sequence of operations.

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The device is designed in accordance with CE-rules.
The declaration of conformity is being held by KEBA AG.

The device meets the ROHS directive (RL 2011/65/EU).
The declaration of conformity is being held by KEBA AG.

Information on disposal
The crossed-out trash container symbol indicates that electric appliances and electronic devices including accessories are to be disposed of separately from general household trash. You can find more information about this directly on the product, in the operating manual or on the packaging.
The materials are recyclable according to their labeling. You can make an important contribution to protecting our environment by reusing, renewing and recycling materials and old appliances.

The **KeContact P20 Installation manual** can be downloaded from the Internet at www.kecontact.com.

The latest **KeContact P20 firmware** can be downloaded from the Internet at www.kecontact.com (download area).
A new firmware can eg. consider modified standards or improve the compatibility with new electric vehicles.

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1 Important information

1.1 Safety instructions

WARNING!

Not observing the safety instructions can result in risk of death, injuries and damage to the device! KEBA AG assumes no liability for claims resulting from this!

- **Electrical hazard!**
  The installation, commissioning and maintenance of the charging station may only be performed by correctly trained, qualified and authorized electricians[1] who are fully responsible for the compliance with existing standards and installation regulations. For details, see "KeContact P20 Installation manual (for the specialist)".

- **Electrical hazard / fire hazard!**
  Never use damaged, worn or dirty charging plugs.

- **The owner must ensure that the charging station is only ever operated in perfect condition:**

  - The charging station must be checked regularly for faulty sockets and connectors and damage to the housing (visual inspection).

  - A damaged charging station must be switched off immediately and replaced.

  - Repair work to the charging station is not permitted and may only be performed by the manufacturer (replacement of the charging station)!

  - Do not carry out any unauthorized conversion work or modifications to the charging station!

  - Do not remove any notices on the device, such as safety symbols, warning notices, rating plates, nameplates or cable markings!

- **The charging station does not have its own power switch! The RCD circuit breaker and the line circuit breaker of the building installation serve as mains disconnector.**

- **No extension cables are permitted for connecting an electric vehicle to the power supply device for electric vehicles.**

  Only electrical vehicles or their chargers may be connected. No connection of other loads is permitted (electric tools etc.)!

- **Read the information and instructions for your vehicle carefully before you charge the vehicle using the charging station.**

  Ventilation:
  A number of vehicles require an external ventilation system in the interior areas due to the possible creation of toxic or explosive gases during the charging procedure.

[1] Persons who, due to their special training, expertise and experience as well as knowledge of current standards, are able to assess the work performed and the possible hazards.

WARNING!

- **Pull the charging cable only at the plug and not at the cable out of the connector.**
- **Ensure that the charging cable is not mechanically damaged (bent, pinched or run over) and the connection area does not come into contact with heat sources, dirt or water.**

CAUTION!

- **Risk of damage!**
  Never clean the charging station using spray water (from a hose, high-pressure cleaner etc.) to clean the charging station!

1.2 Intended use

KeContact P20 is a "charging station" for the indoor and outdoor area at which electrically operated vehicles can be charged (e.g. electric automobiles).

The charging station is designed for installation on a wall or in a floor-mounted column.

The respective national regulations must be observed with regard to the installation and connection of the charging station.

The intended use of the device always includes the compliance with the environmental conditions for which this device was developed.

The device was developed, manufactured, inspected and documented in compliance with the relevant safety standards. Therefore, the products do not pose any danger to the health of persons or a risk of damage to other property or equipment under normal circumstances, provided that the instructions and safety precautions relating to the intended use are properly observed.

The instructions contained in this manual must be followed precisely in all circumstances. Failure to do so could result in the creation of potential sources of danger or the disabling of safety devices. Apart from the safety instructions given in this manual, the safety precautions and accident prevention measures appropriate to the situation in question must also be observed.

Only electrical vehicles or their chargers may be connected. A connection of other loads (e.g. electric tools) is not permitted!

Due to technical or legal restrictions, not all variants / options are available in all countries.

1.3 About this manual

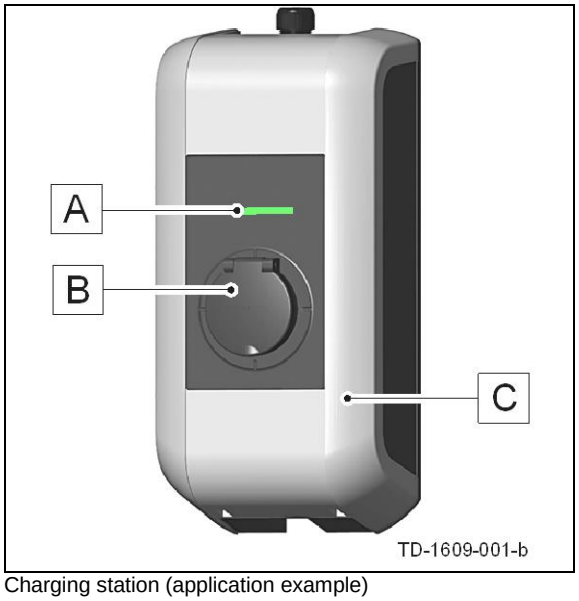
This manual is valid for devices of the type: KeContact P20

Use of this manual
This manual is intended for the following groups of people:

- End-users (users of the charging station)
- Start-up technicians, Service technicians

2 Overview

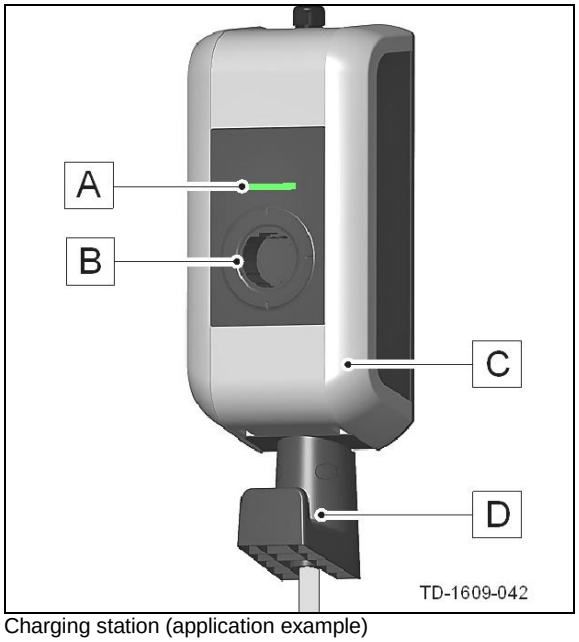
2.1 Variant overview



Charging station (application example)

Base model with socket (Type 2)

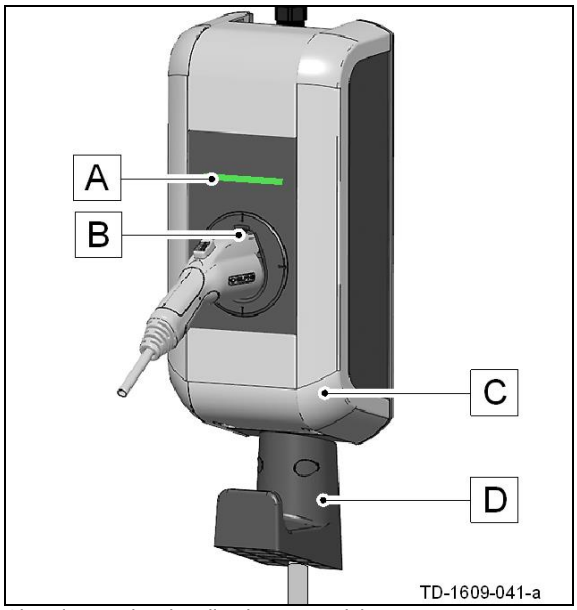
[A]… Status LED
[B]… Standard socket (variants possible)
[C]… Housing cover



Charging station (application example)

Base model with charging cable (Type 2)

[A]… Status LED
[B]… Parking bay for charging plug
[C]… Housing cover
[D]… Hanger for charging cable



Charging station (application example)

Base model with charging cable (Type 1)

[A]… Status LED
[B]… Parking bay for charging plug
[C]… Housing cover
[D]… Hanger for charging cable

2.2 Optional equipment

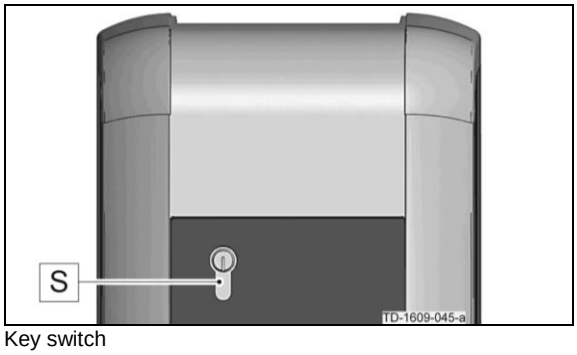
2.2.1 RFID sensor

RFID sensor

RFID sensor

The RFID sensor **[R]** is used for touchless authorization of a user with MIFARE cards or tags according to ISO14443.

2.2.2 Key switch



Key switch

Key switch

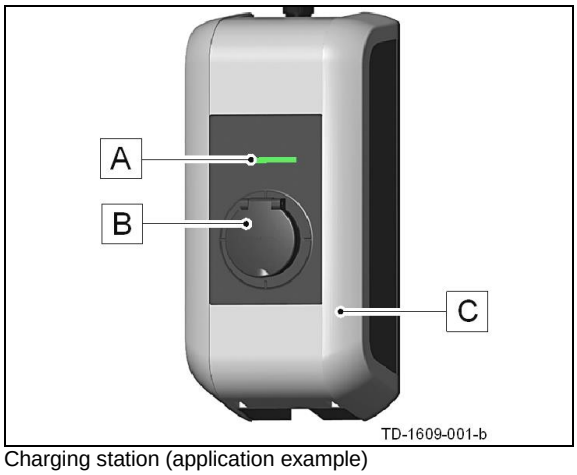
The key switch **[S]** is used for authorizing a user.

2.2.3 Additional optional equipment

- Network capability
- Switch contact (for control of external additional equipment)
- Enable input for e.g. ripple control receivers, time switches,…
  This permits a scheduled (time-controlled) charging of the vehicle to be realized.
- PLC (Power Line Communication) according to GreenPhy standard
- Mounting column

3 Using the charging station

3.1 Charging station with socket



Charging station (application example)

Base model with socket

[A]… Status LED
[B]… Standard socket (variants possible)
[C]… Housing cover

Starting the charging procedure	Status LED
► The charging cable is neither plugged into to the vehicle nor the charging station.	The charging station must be ready for operation, the status LED flashes green slowly every 3 seconds ("*Ready for operation*").
► Plug the charging cable into the charging station first.	The status LED lights up orange briefly ("*Wait for locking*") while the system attempts to mechanically lock the plug. After successful locking, the status LED flashes slowly green every 3 seconds again.
► Now plug the charging cable into the vehicle.	The status LED lights up green continuously ("*Ready for charging*"). The charging procedure can be started by the vehicle from this point of time; then the status LED flashes green ("*Charging procedure*").

The charging procedure can also be started in reverse plugging sequence.

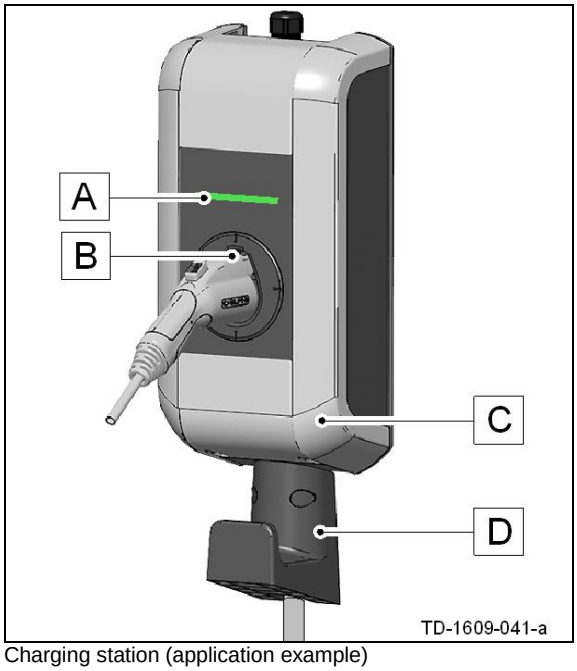
Ending the charging procedure

Do not use force to pull out the mechanically locked plug! The charging procedure must be interrupted or completed by the plugged-in vehicle. For details, please refer to the instructions of the vehicle manufacturer.

► Disconnect the charging cable from the vehicle ("*Wait for unplugging*").

► Disconnect the charging cable from the charging station.

3.2 Charging station with charging cable



Charging station (application example)

Typical version with charging cable

[A]… Status LED
[B]… Parking bay for charging plug
[C]… Housing cover
[D]… Hanger for charging cable

Storing the charging plug/charging cable

If no charging procedure is being performed, the charging plug can be plugged into the parking bay **[B]** for safe storage.

The charging cable can be coiled up and placed on the hanger **[D]**.

Note
Depending on the design of the charging station, the parking bay may deviate from the form shown.

Starting the charging procedure

► The charging cable is not plugged into the vehicle.

► Plug the charging cable into the vehicle.

Status LED

The charging station must be ready for operation, the status LED flashes green slowly every 3 seconds ("*Ready for operation*").

The status LED lights up green continuously ("*Ready for charging*"). The charging procedure can be started by the vehicle from this point of time; then the status LED flashes green ("*Charging procedure*").

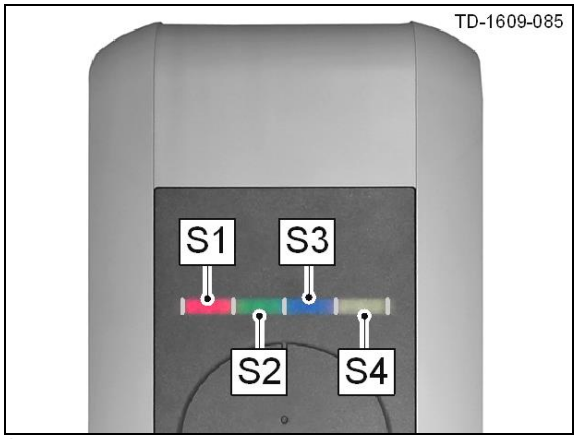
Ending the charging procedure

The charging procedure is ended by unplugging the charging cable at the vehicle. For details, please refer to the instructions of the vehicle manufacturer.

► Disconnect the charging cable from the vehicle ("*Wait for unplugging*").

► Store the charging cable on the provided hanger of the device.

3.3 Status LED



Status LED – segments

Status LED - segments

The status LED provides information about the current operating state of the charging station and consists of 4 segments (S1 to S4) which can light up together or individually.

All segments can light up or flash in different colors.

If not otherwise specified, all 4 segments light up together.

Status LED		Function
Flashes slowly every 3 seconds	green	**Ready for operation** (charging cable is not yet plugged in on both sides; optional: The charging station was authorized correctly by key switch or RFID card)
	blue	**Authorization is required** (charging station has not been authorized correctly yet; authorization with RFID, key switch or external enable required)
Lights up continuously	green	**Ready for charging** (charging cable is plugged in on both sides and locked)
	blue	**Ready for charging with ISO15118** (charging cable is plugged in on both sides and locked) **External enable still required** (authorization with RFID or key switch carried out; vehicle connected correctly; external enable on the enable input still necessary)
Flashes every second	green	**Charging procedure** is carried out (applies for "EN 61851 Mode 3" charging procedure)
	blue	**Charging procedure** is carried out (applies for "ISO15118" charging procedure)
Lights up orange briefly after plugging in		**Wait for locking** (charging cable was plugged in and the system attempts to lock the plug)
Green LED goes out briefly every 3 seconds		**Wait for unplugging** (charging procedure complete, vehicle unplugged)

Flashes orange slowly every 5 seconds	**Temperature limit exceeded** (charging procedure temporarily interrupted; charging continues after cooling down)
Flashes red	**Malfunction** (for details, see "Troubleshooting")

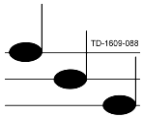
Segment 1 lights up orange	**RFID programming mode** (RFID cards can be programmed in this mode. For details, see "Programming RFID user cards")
Segment 2 lights up orange	**Commissioning mode** (the charging station is in commissioning mode)

3.4 Authorization (optional)

An (optional) authorization of a user for charging at the charging station can either occur with a **key switch** or by means of **RFID user cards** depending on the device version.

Authorization required:
The status LED flashes blue slowly every 3 seconds.

Authorization successful:
A successful authorization will be indicated by a series of increasing tones.



Authorization failed:
A failed authorization will be indicated by a series of decreasing tones.

Note
*After successful authorization, if the charging procedure is not started within **60 seconds**, the automatic enable expires.*

3.5 Programming RFID user cards (optional)

The authorization by an RFID master card is necessary for the programming. The programming mode can be activated and deactivated with the RFID master card which is programmed during commissioning of the charging station.

- Activating programming mode:
  Hold the RFID master card in front of the RFID sensor and wait for the signal tone.
- Programming RFID user cards:
  Hold the new RFID user card in front of the RFID sensor within 5 seconds and wait for the signal tone.
- End programming mode:
  To confirm, hold the RFID master card in front of the RFID sensor again within 5 seconds and wait for the signal tone.

  The RFID user card is now programmed.

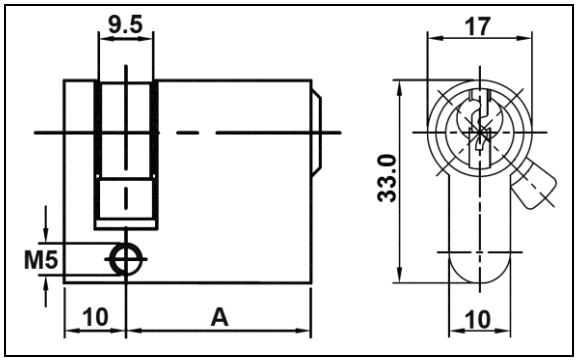
Deleting RFID user cards:
The deletion of all stored RFID user cards is only possible by opening the device (see “Installation manual”.

3.6 Installing/removing the cylinder lock

Cylinder lock with key

General

Device versions with a key switch are standard fitted with a cylinder lock. If needed, the cylinder lock can be replaced according to the following instructions.

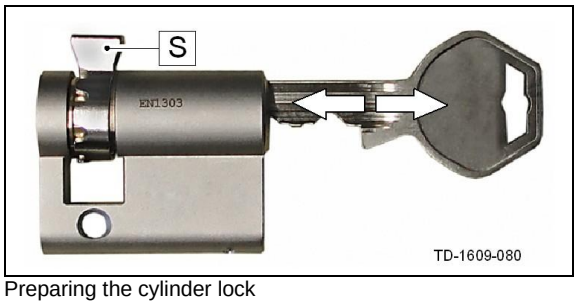


Profile half cylinder – dimensions in millimeters

Requirements

The cylinder lock must fulfill the following requirements:

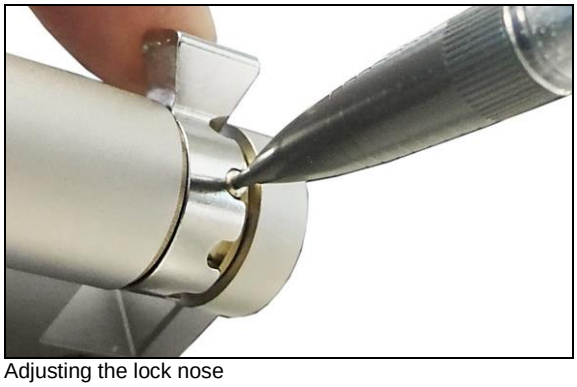
- Profile half cylinder according to EN 1303 or DIN 18252
- Dimension **A = 30 mm** (for A=31 mm a minimal overhang occurs on the housing)
- Adjustable lock nose



Preparing the cylinder lock

Preparing the cylinder lock

► Adjust the angle of the lock nose **[S]** so that it faces up vertically when the key is in the removal position.

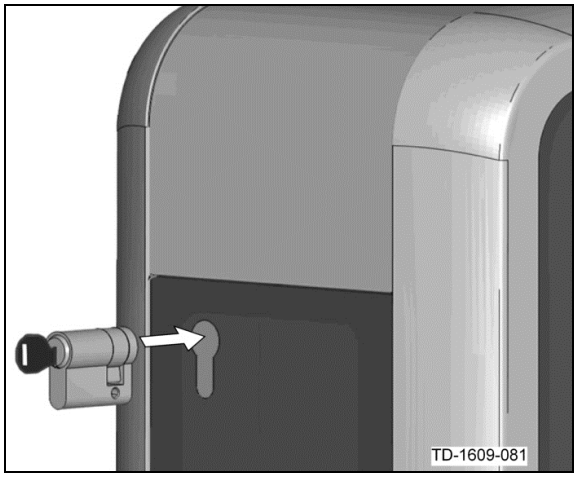


Adjusting the lock nose

Adjusting the lock nose

► The adjustment of the lock nose angle normally occurs as follows:

Use a thin object to press in the code pin and push the lock nose into the desired position.

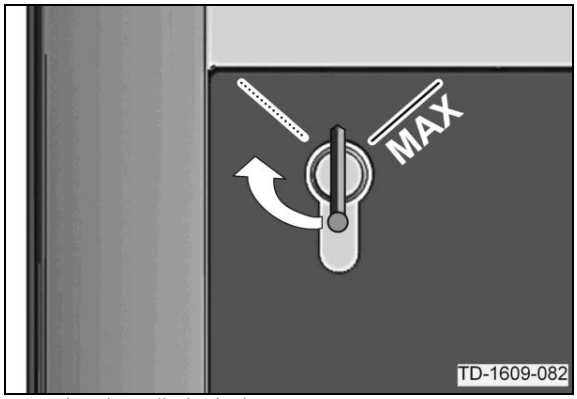


Inserting the cylinder lock

Inserting the cylinder lock

- Turn the key 180° so that the lock nose faces downwards.
- Use light pressure to press the cylinder lock into the housing completely until it audibly engages.

  The cylinder lock should be flush with the surface of the housing.



Engaging the cylinder lock

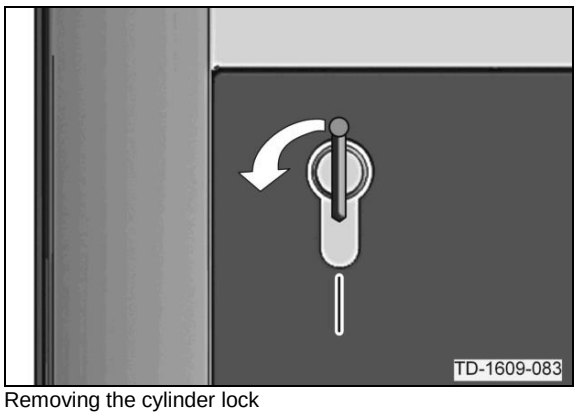
Engaging the cylinder lock

- Turn the key to the right until the resistances are noticeably overcome and the key can be removed.

  Do not turn the key past the **[MAX]** position.

  The key switch is now ready for use.

Removing the cylinder lock



Removing the cylinder lock

Removing the cylinder lock

- Turn the key to the left until the resistances are noticeably overcome.

  Turn the key further until it is located in the vertical position.
- The cylinder lock can now be unlocked from the holder using slightly increased force and removed.

4 Troubleshooting

PROBLEM	Possible cause - remedy
Status LED does not light up	• No voltage supply – Check RCD circuit breaker and line circuit breaker and switch on if necessary. • Defective – please contact your service partner.
Charging procedure is not started	• The plug is not inserted correctly - Pull out the plug and insert the plug again. • The charging procedure was not performed correctly – follow the instructions in Chapter "Starting/ending the charging procedure". • The plug may possibly be dirty in the locking area or damaged – clean the plug or have it replaced. • The vehicle does not need any power or has an error – check the vehicle. • The vehicle is programmed to a later start time for charging.
Vehicle is not fully charged **Increased charging time**	• Power reduction due high temperature by vehicle or charging station: - Protect the vehicle and charging station from direct sunlight during the charging process (carport, garage, ...) - Visual inspection of the connectors for dirt, wear or damages. If necessary, please contact your service partner. • Missing release by external controller (energy supplier, PV system, ...)
Standard plug cannot be unplugged	• The charging procedure was not ended correctly by the vehicle – end the charging procedure according to the instructions of the vehicle manufacturer. • Eventually the plug cannot be unlocked under tension - Push in the plug and connect it again on the vehicle. Then end the charging procedure again.
Status LED flashes red	• Malfunction – first check the possible causes of error for the malfunction (*). Switch off the supply voltage of the charging station (installed or superordinate RCD circuit breaker and line circuit breaker). Unplug the charging cable from the charging station. Switch on the voltage supply again. • Defective – please contact your service partner.

Please see our FAQ list on www.kecontact.com for further information.

(*) Possible causes of error for malfunction (status LED flashes red)

Malfunctions must always be acknowledged by unplugging the plug and can be triggered, for example, by the following causes:

- The plug is not properly inserted; locking is not possible => insert the plug quickly.
- The plug was unplugged during the charging procedure:
  The plug was not locked correctly – unplug the plug and plug in correctly and make sure it interlocks correctly.
- The plug at the charging station sends an invalid state:
  Hardware fault of the cable – unplug the plug and plug in correctly, if necessary, replace the cable.
- Temperature shut-off:
  The permitted temperature in the charging station was exceeded – unplug the plug and wait until the charging station has cooled down.

Reset of an error:

If during the inserting of the plug or the charging procedure an interrupt occurs, the charging station tries to start the charging procedure again (max. 5 times).

If the charging procedure can’t be started, it must be acknowledged by the proper ending of the charging procedure (see section "Ending the charging procedure") or eventually by rebooting the charging station. On repeated occurrence of errors without any reason, please contact customer service.

5 Maintenance

The charging station is essentially maintenance free but it must be checked regularly by the owner for faulty sockets and charging plug (including the charging cable) and damage to the housing.

5.1 Cleaning

► If necessary, clean the housing of the charging station using a moist cloth. Stubborn dirt can be removed using a mild, solvent-free, non-scouring cleaning agent.

5.2 Customer service

For questions or problems please contact the executive electrical installation company.

Before contacting customer service:

- Check the troubleshooting measures in the "Troubleshooting" chapter.
- Check the troubleshooting measures in the operating manual of the vehicle manufacturer.
- Make note of model version and serial number (type plate on top of the device).

Type plate

[A]…Model version
[B]…Serial number
[C]…..Part number

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